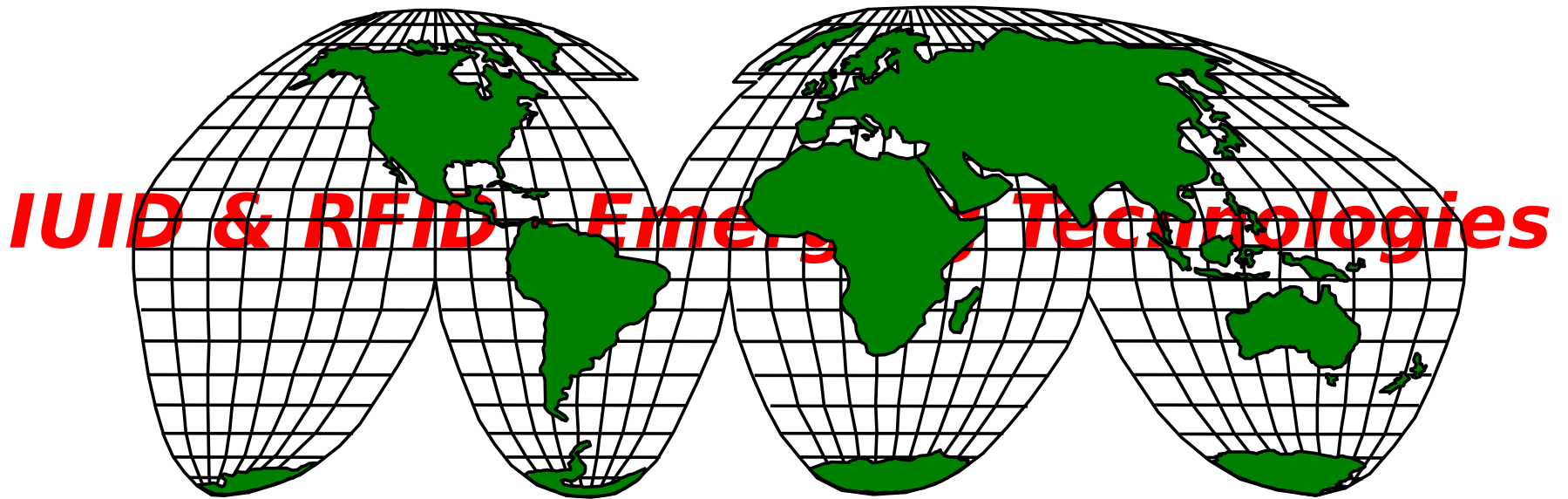




# Defense Logistics Management System (DLMS) Introductory Training





# DLMS Training Catalog

- Module 1 - Introduction to the DLMS**
- Module 2 - Electronic Data Interchange (EDI) Basics and ASC X12 EDI Definitions and Concepts**
- Module 3 - DLMS Functionality & Transaction Life-Cycle**
- Module 4 - DLMS Transaction Supplement Content**
- Module 4F - DLMS Functional Financial Transaction Life-Cycle**
- Module 5 - IUID & RFID - Emerging Technologies**
- Module 6 - Creating/Reengineering DOD Logistics Business Processes**
- Module 6A - DLMS Configuration Management (stand alone Module)**
- Module 7 - Enterprise Interoperability Tools**
- Module 8 - DoD Activity Address Directory (DoDAAD)**



# Module Structure

## Module 5 - IUID & RFID - Emerging Technologies

- **Item Unique Identification (IUID)**
- **Radio Frequency Identification (RFID)**



# Module 5 Objectives

- **IUID and its relationship to the DLMS**
- **RFID and its relationship to the DLMS**
- **DLMS Transactions supporting IUID and RFID**
- **Data integration of Supply and Transportation information**
- **Establishing parent/child relationship using DLMS transactions**



# **Unique Item Identification (IUID), Radio Frequency Identification (RFID), & DLMS**



# IUID, RFID, & DLMS Relationship

- **The IUID is a data set that identifies an instance of an item uniquely from all others even if it is identical to others in all other physical and functional aspects**
- **RFID is an automatic identification method, consisting of a chip and antenna, relying on storing and remotely retrieving data using devices called RFID tags or transponders.**
- **The DLMS X12 EDI and DLMS XML provide the capability to integrate the RFID tag contents with the business data and**

**IUID, RFID, and DLMS complement each other in providing business event intelligence across the supply chain**

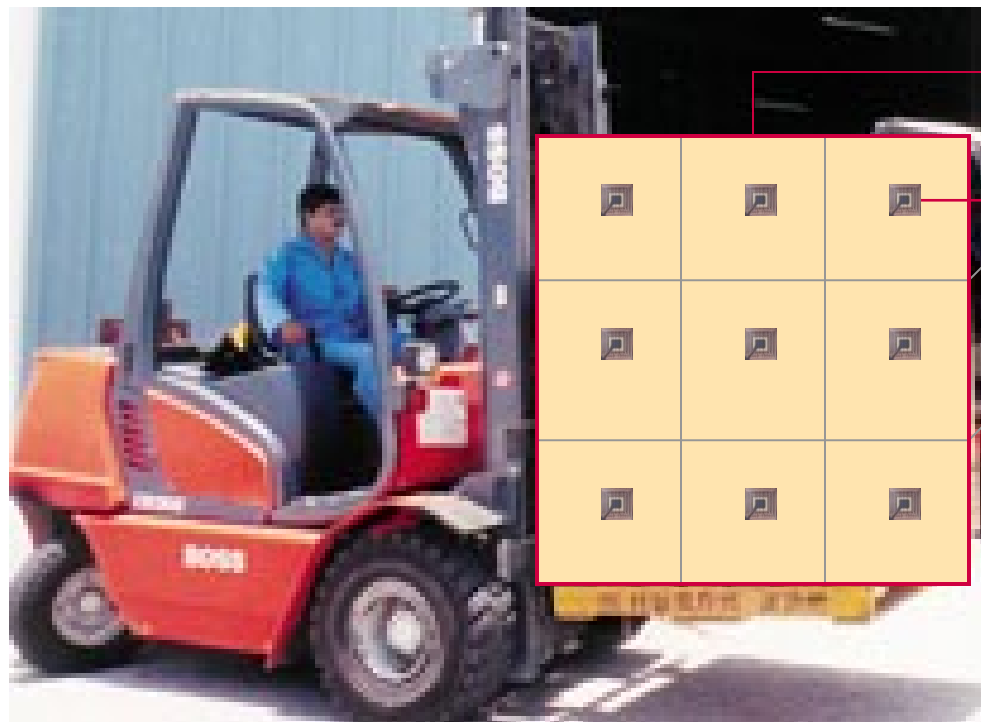


# IUID-RFID Policy Relationship

(Example)

Where required: **Passive RFID tags applied at the case, pallet and package layers**

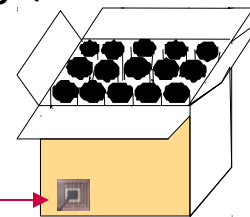
Where required: **IUID attached or directly marked on items using a data matrix to carry the IUID data elements**



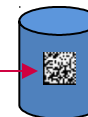
RFID Tag (Pallet Layer)

RFID Tag (Case Layer)

RFID Tag (Item Package Layer)



IUID Data Matrix (Item Layer)





# Unique Identification (IUID) of Tangible Items





# DoD Vision for IUID

- **Establish a strategic imperative for uniquely identifying tangible items relying to the maximum extent practical on international standards and commercial item markings and while not imposing unique government data requirements.**
- **Unique identification of tangible items will improve:**
  - **Item visibility and tracking across the DOD enterprise**
  - **Product life-cycle item management**
  - **Financial Accountability and valuation of assets**
  - **Clean Audit Opinions on Property, Plant and Equipment & Operating Materials and Supplies**



# IUID Policy Overview

- **Policy memorandum of July 29, 2003 established IUID as a mandatory DoD requirement on all solicitations issued on or after January 1, 2004.**
- **DoD Instruction 8320.04, "Item Unique Identification Standards for Tangible Personal Property," June 16, 2008**
- **Policy memorandum of December 30, 2010, Item Unique Identification (IUID) of Tangible Personal Property - Policy Refinement of DoD Instruction 8320.04 limited the requirement for IUID to:**
  - **DoD serially managed items that are: sensitive, critical safety, and/or pilferable items that have an unique item-level traceability requirement at any point in their lifecycle; and all depot-level reparable items.**
  - **Any other item that the requiring activity decides requires unique item level traceability at any point in their lifecycle.**
- **IUID policy for Government Furnished Property (GFP) added DFARS (252.211-7007) in August 2012. Criteria for IUID of GFP may be different from that of items managed through the traditional supply chain.**
- **Policy continues to evolve! The latest policies and information on IUID can be found at:**



# Unique Item Identifier (UII)

**UII means a set of data elements permanently marked on an item that is globally unique and unambiguous and never changes, in order to provide traceability of the item throughout its total life cycle.**

**Coded in the Data Matrix:**



**Issuing Agency Code (IAC) = D (IAC for CAGE derived using the Enterprise data qualifier)**

**Enterprise Identifier = 0CVA5 (CAGE Code)**

**Original Part Number= 1234**

**Serial Number = 674A36458**

UII Construct 1	UII Construct 2
<i>If the serial number is unique within the enterprise identifier</i>	<i>If the serial number is not unique within the enterprise identifier but is unique within the part number</i>
D0CVA5674A36458	D0CVA51234674A36458

**UII policy recognizes and includes other UII equivalents (e.g., VIN\*, GRIA\*\*, etc.)**  
\* Vehicle Identification Number, \*\* Global Returnable Individual Asset



# Radio Frequency Identification (RFID)



# Types of RFID Used in DoD

- **Active RFID - Longer range**
  - ✓ Continuously powered tag; internal power source
  - ✓ Low-level RF signal received by the tag
  - ✓ High-level RF signal back to the reader/interrogator
  - ✓ Usually used for longer tag read distances
  - ✓ Can store 128KB of data, to include tag number
- **Passive RFID - Shorter range**
  - ✓ No internal power source; collects energy from reader
  - ✓ Needs powerful RF signal from reader
  - ✓ Low RF strength signal returned from tag
  - ✓ Preferred for uses when tag and interrogator are close
  - ✓ Stores small amount of data (e.g., tag number)

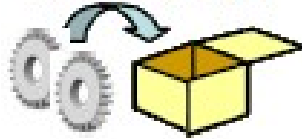


# AIT Consolidation Layers

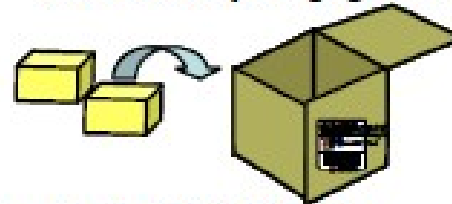
Layer 0—Product Item



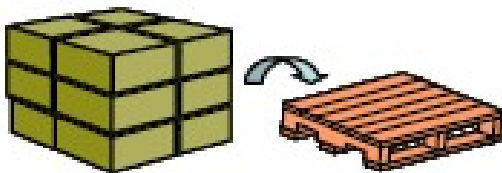
Layer 1—Package



Layer 2—Transport Unit (cartons, boxes, tri-wall packaging, crates, etc.)



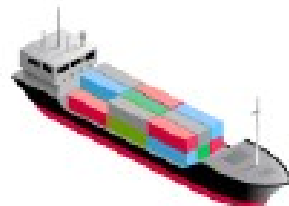
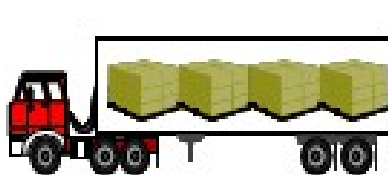
Layer 3—Unit Load (items held together as a single unit)



Layer 4—Freight Container (sea vans, 463L pallets with net)



Layer 5—Movement Vehicle (truck, aircraft, ship, train)





# pRFID - Optimize the Supply Chain

**DOD is an early adopter of passive pRFID technology**

- **Implement passive RFID Business Rules - 1 Jan 05**
  - ✓ **Passive tagging of materiel shipped to DOD**
- **Initial DOD capability to read passive RFID tags and use data**
- **Published DFARS Rule requiring application of passive RFID**
- **Integrated passive RFID data into the DOD Business Enterprise Architecture (e.g., DLMS)**
- **USTRANSCOM is the DOD functional proponent for AIT**
- **The latest policy and information on DOD's RFID implementation can be found at:**

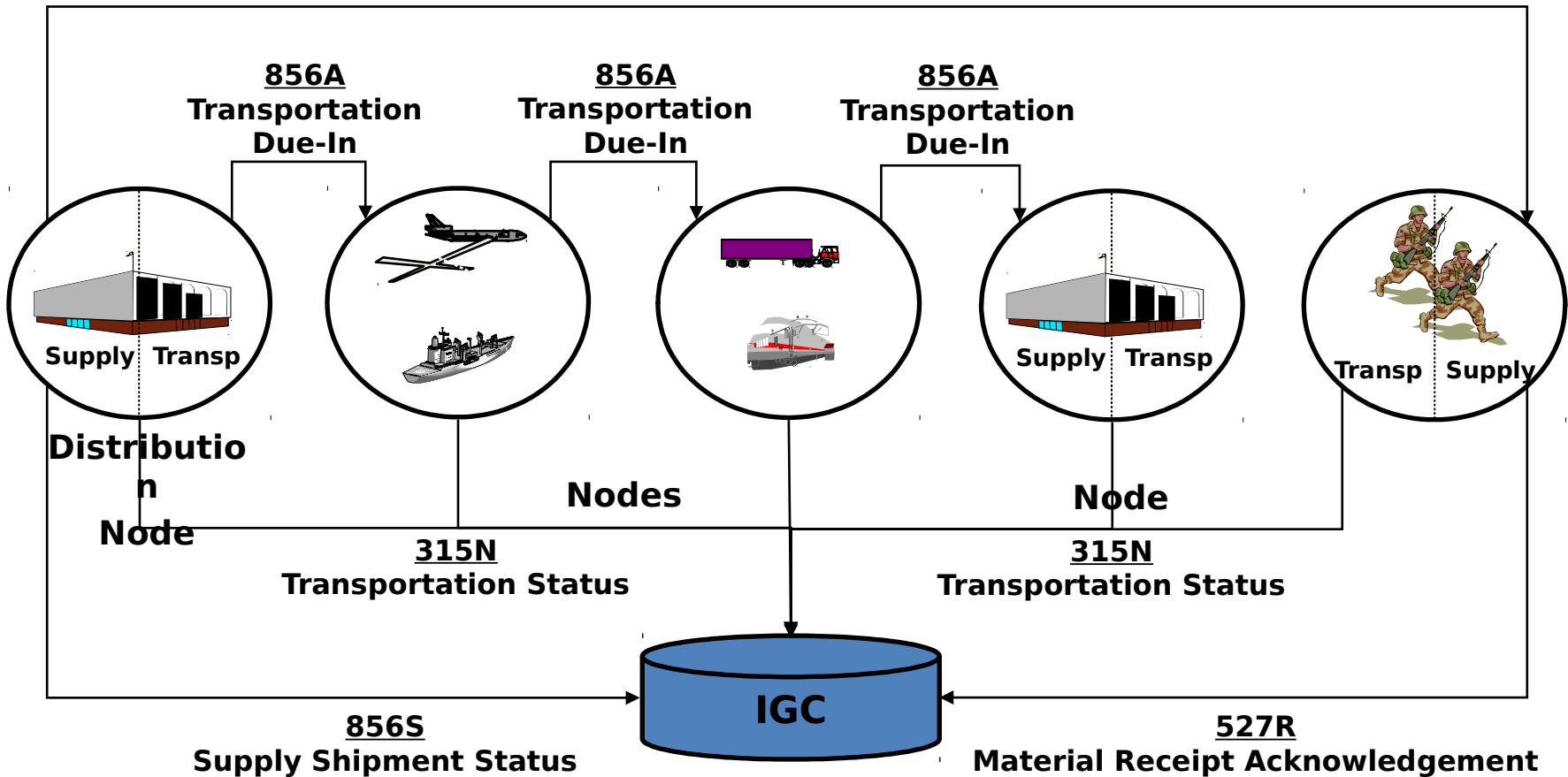
**<http://www.acq.osd.mil/log/rfid/index.htm>**

- **Hands-Off Data Capture**
  - **Improve Data Accuracy**
    - **Improve Logistics Processing Time**
      - **Improve Manpower Utilization**



# Nodal Asset Visibility

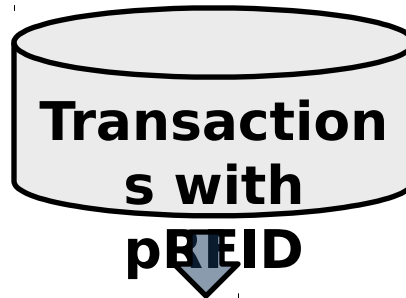
## 856S Supply Shipment Status





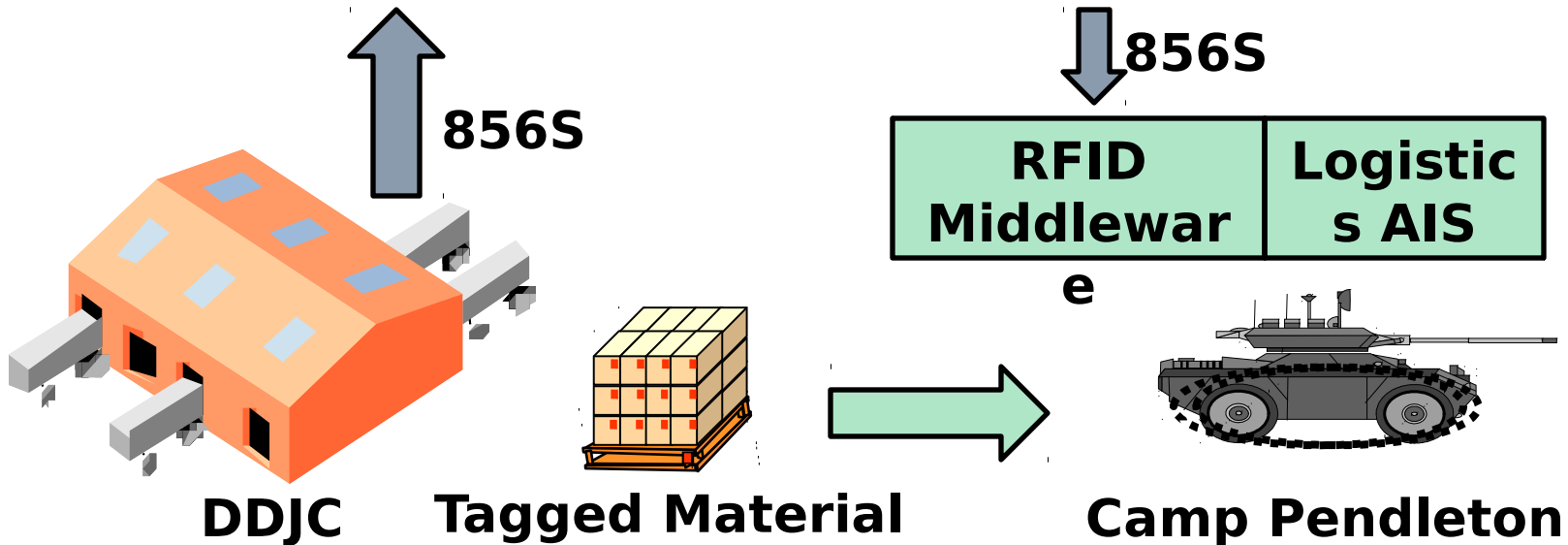


# pRFID & DLMS (Supply)



856S:  
2F02032533139342DFDC  
1C35 is associated to  
requisition  
V0336552740001

## DLA Transaction Services

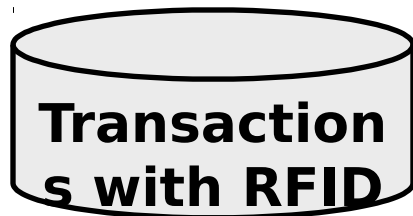


RFID and relevant business information prelodged to the receiving facility.

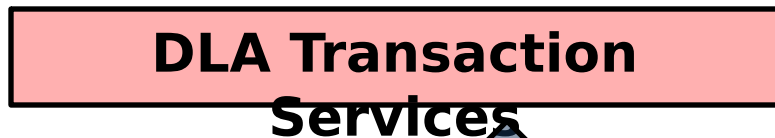
Use to automatically trigger receipt processes upon material arrival.



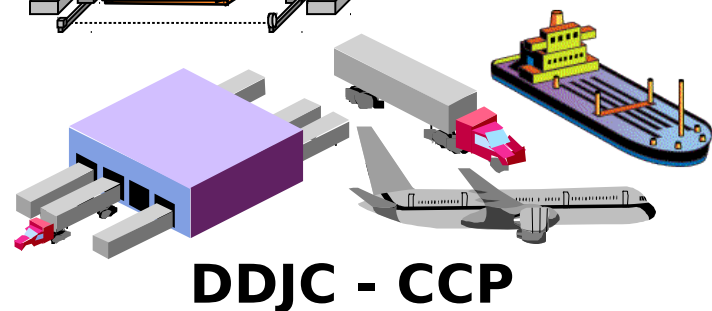
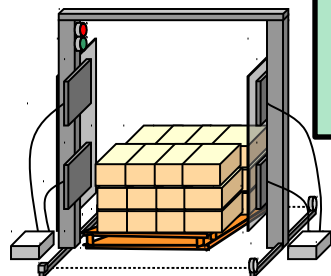
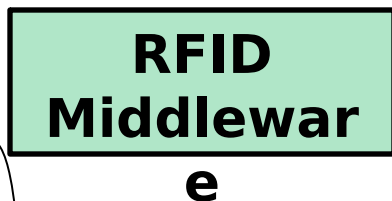
# PRFID & DLMS (Supply)



XML Visibility ↑



XML Visibility ↑



## Data Elements

- RFID Tag # =  
2F02032533139342DFDC  
1C35
- Time Stamp = 7/4/2010  
0900
- Location = CCP
- Business Step = Arrived

Report RFID Tag read event data to DAAS

User can query WEBVLIPS or IGC to ascertain last known location of RFID tagged material.



# UID, pRFID & DLMS Operating In Concert Can Significantly Enhance

**DOD Supply Chain Processes**

- Establish initial acquisition cost and subsequent valuations

- Identify a particular item requiring maintenance
- Identify particular problem items to be singled out for removal or upgrade
- Ensure that exact items are returned to the customer
- Locate items for expedited processing
- Maintain a record of items where DOD ownership has ended
- Track a particular item through the entire Supply



# DLMS Supporting IUID

- 140A Small Arms Reporting
- 180M Material Returns Reporting
- 511M Requisition Modification
- 511R Requisition
- 527D \* Due-in, Advance Receipt, Due V
- 527R Receipt, Inquiry, Response & M
- Acknowledgement
- 810L Logistics Bill
- 842A/W Supply Discrepancy Report Submission
- 842S/Q Storage Quality Control Report
- 842S/R Storage Quality Control Report Reply
- 842P Product Quality Deficiency Report
- 846A Asset Reclassification
- 846F Ammunition Freeze/Unfreeze
- 846I Asset Status Inquiry/Report
- 846R Location Reconciliation Request
- 856 Advance Ship Notice
- 856R Shipment Status Materiel Return
- 856S Shipment Status
- 861 Acceptance Report
- 867I Issue
- 870M Material Returns Supply Status
- 870S Supply Status
- 940R Material Release
- 945A Material Release Advice

*NOTE: Logistics IUID business requirements are under development through a series of IUID Workshops; business rules for implementation will be documented, staffed, and finalized through the DLMS configuration management process. Some transactions on this list may be removed if there is no business requirement.*

\* 527D also contains a IUID and/or RFID indicator(s) capability to alert the receiving storage activity that the incoming materiel should have IUID and/or passive RFID data IAW the contract.



# DLMS Supporting Passive RFID

- 856 Advance Shipping Notice**
- 856R Shipment Status Material Returns**
- 856S Shipment Status**
- XML Reader Registration**
- XML Visibility Response**
- XML Visibility**



# Illustrative Examples of IUID and pRFID Transmissions via 856 ASN

**The 856 ASN uses a hierarchical structure to convey information and establish relationships:**

- **Between the shipment/contract and the individual line items which compose the shipment**
- **Between the CLIN and the uniquely identified items associated with the CLIN**
- **Between the tagged containers (case or pallet) and the number of items or the UII of uniquely identified items they contain**
- **Between tagged containers (cases on a pallet)**



# IUID and RFID in 856 ASN

**The HL loops are defined as Shipment (DD 250 level) (HL03=S) Address (HL03=V), Line Item (HL03=I), IUID (HL03=D), embedded UII (HL03=E), and pRFID (HL03=P)**

- **The IUID loop includes:**
  - ✓ **The SLN segment with IUID pedigree information: acquisition cost, unique item identifier (UII) type, enterprise identifier and original part number, when applicable**
  - ✓ **A separate REF with the UII and serial number for each item with the same pedigree in the SLN**
- **pRFID loop includes:**
  - ✓ **The REF with the RFID tag value and a separate REF for each UII, when applicable -- it tells you which items are in which container**
  - ✓ **The Destination Quantity (SDQ) with the CLIN and the Quantity of that line item packed under the RFID to**



# Multiple CLINs in Multiple Cases with Multiple CLINs per Case and Multiple Cases per CLIN on a Pallet

```

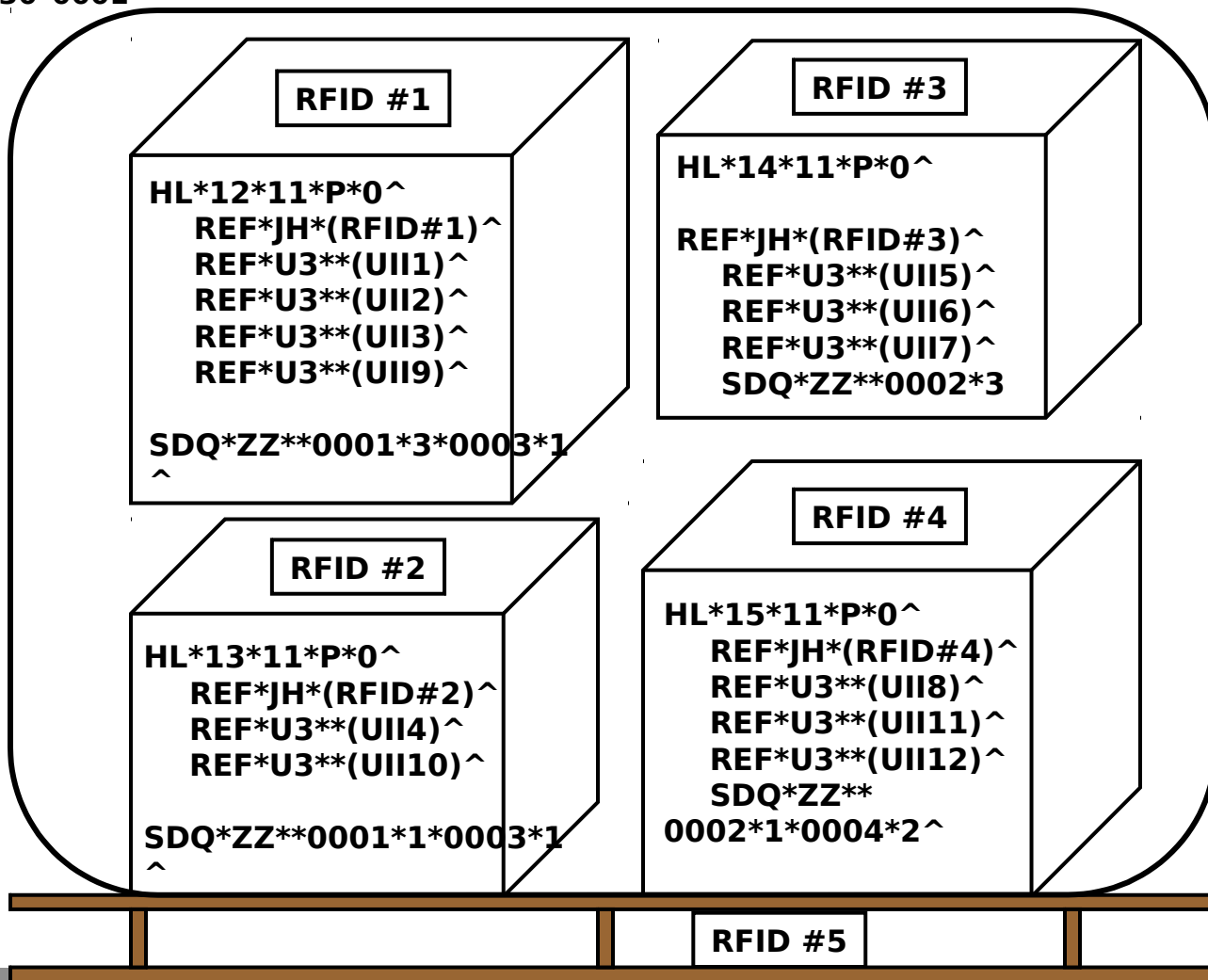
ST*856*0001^
BSN*00*DIS0001*20040720*1130*0001*
AS^
HL*1**V*1^
HL*2*1*S*1^
HL*3*2*I*1^
  LIN*0001*VP*ABC^
  SN1**4*EA^
HL*4*3*D*0^
  SLN*1**O*1*...*D^
  REF*U3*(UII1)^
  REF*U3*(UII2)^
  REF*U3*(UII3)^
  REF*U3*(UII4)^
HL*5*2*I*1^
  LIN*0002*VP*DEF^
  SN1**4*EA^
HL*6*5*D*0
  SLN*1**O*1*...*D^
  REF*U3*(UII5)^
  REF*U3*(UII6)^
  REF*U3*(UII7)^
  REF*U3*(UII8)^
HL*7*2*I*1^
  LIN*0003*VP*GHI^
  SN1**2*EA^
HL*8*7*D*0^
  SLN*1**O*1*...*D^
  REF*U3*(UII9)^
  REF*U3*(UII10)^
HL*9*2*I*1^
  LIN*0004*VP*JKL^
  SN1**2*EA^
HL*10*9*D*0^
  SLN*1**O*1*...*D^
  REF*U3*(UII11)^
  REF*U3*(UII12)^

```

```

HL*11*2*P*1^
REF*JH*(RFID#5)^

```







# Module 5 Quiz

**Question 1:** Which of the following is a key advantage associated implementing and integrating IUID into supply chain processes?

- a) Enhance Total Asset Visibility; Improve Life-Cycle Item Management and Accountability; Improve Data Quality and Interoperability
- b) Clean Audit Opinions on Property, Plant & Equipment, Operating Materials and Supplies
- c) Both a & b

**Question 2:** What benefits does RFID provide to DOD?

- d) Hands-off data capture
- e) Improve Data Accuracy
- f) Improve Logistics Processing Time
- g) All of the above

**Question 3:** To improve material visibility across the supply chain which of the following technologies does DOD need to implement?

- h) IUID
- i) RFID
- j) DLMS



# End of Module 5